

CATS NEWSLETTER



The Official Journal of the Capital Area Timex/Sinclair Users Group

PRESIDENTIAL RAMBLINGS

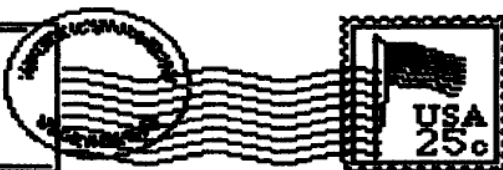
by Bill Kuchner

ON



Bill was unable to make the deadline this month so watch for his comments in the November issue.

Letters to the Editor



Editor's note: I received the following phone message. Can any of our members please help out?

Information is requested on some software for the TS 1000 that Jules Gesang used to sell. The program in question is WordSync2, v4 and support for a full sized printer. If anyone has any information, or possibly a copy, please contact:

Don Varling
P.O. Box 133
Pifield, WI 54524
(715) 762-2641

To: All Members
From: Duane Parker
Subject: October Workshop

I will continue the Pascal workshop for CATS on Oct 14th at 11AM for those who are interested. Those that are interested are requested to bring their QLs, monitors, interface cables, and programs, if they have them. No EPROMS are needed-I will have all the software for those that need it. We will continue the exercises that we started.

Programming Tips for the 2068

by Hank Dickson

In honor of the "October is TS 2068 Month" movement, CATS is happy to present the following collection of tips, aids, and utilities which should prove helpful with any TS 2068 programing. These gems come to us from the archives of TIMELINEZ and SINC TIMES:

1. POKE 23609,X
For keyboard click (x= 1 to 255).
2. POKE 23692,2
Use before every print for automatic scrolling. Works like the scroll command on the 1000/1500.
3. POKE 23692,1
Another way to control the scroll. Scrolls 22 lines, then a key must be pressed for every line.
4. POKE 23658,8
Puts 2068 in caps mode.
5. POKE 23658,0
Takes 2068 out of caps mode.
6. PAUSE 0
Pause until any key pressed.
7. POKE 23561,* (* = 1 to 35)
Time that a key must be held down before it repeats. Prefer 10-15 for text.
8. POKE 23562,* (* = 1 to 5)
Delay between successive repeats of a key being held down.

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OCTOBER MEETING AGENDA

- 11:00** Pascal Workshop with
Duane Parker
Hardware Workshop
2:00 General Meeting
2:30 The Complete Computer
System
presented by Joe Miller
4:30 Adjourn

Please Remember

Members are requested to utilize on-street parking or the Brent School lot (immediately behind the library lot). Library patrons need the library lot.

KEY DATES

OCTOBER

- 14 General Meeting
2 November N/L
DEADLINE
24 Executive Board Meeting

NOVEMBER

- 4 General Meeting

Note the **EARLY** November meeting date

Coming in December: **THE Q&A Exchange & Christmas Party.**

from the editor...

Who said that the 2068 is dead? Not from the looks of this issue! Last year the newsletter was accused of being to "QLish". Well, we print what is submitted and this issue is proof that we haven't forgotten the 2068 (or the 1000). Send it in and I'll print it.

Picnic recap

Well, if you were there, I don't have to tell you that the "hard core" CATS members were in attendance at the Third Annual "Picnic in the Park". For those that didn't make it, you should mark down the 4th Saturday of NEXT September so you won't miss the fun next year.

Atari dtp contest

As I indicated in August, I entered the August and September issues of the newsletter in a dtp contest sponsored by Current Notes magazine and the Washington Area Atari Computer Enthusiasts. Since the entries were slightly different than those that were sent out to our members, I will have them on display at the meeting.

Keyboard chips

I still have 3 anti-bounce keyboard chips left from the group buy. If someone ordered one and didn't get one, let me know. Also, anyone else that would like to get one of these jewels should contact me at home or through the BBS.

QUANTA dtp controversy

CATS members getting QUANTA magazine will notice an article in the August issue by yours truly on Digital Precision's new dtp program, Professional Publisher. My letter was essentially the article I published in the February/March issue of our newsletter. As usual, DP "circled the wagons" in their reply. I feel that a rebuttal is in order to clear up some of the mistakes on both sides of the issue. Since this might seem to some to be a personal matter, I will be writing an article in the next issue, rather than airing my views in the

editorial column. In the mean time, if any of you are using Professional Publisher, please let me know. Also, read the my article and see if you agree/disagree. While DP isn't, I think that I will gladly admit it if I make a mistake. In the interests of making my rebuttal as factual as possible, I invite your comments. I would ask that you do it quickly as I'm going to be writing this story in the next two weeks.

Low Cost Lasers

Is there a laser printer in your future? If you think that they are too expensive, think again. I was going through some old electronic magazines and came across an issue of Popular Electronics who's lead story was on the Hewlett-Packard LaserJet printer for "just \$3500"! In the last few months Epson and Toshiba have brought out laser printers which retail "on the street" (read from mail-order discounters) for around \$1600. They join a Panasonic printer which is selling for around \$1400. In August, IBM announced that they were going to sell a printer to compete with the H-P LaserJet II and it would be sold at \$1395. Well, H-P, with around 45% of the laser printer market, didn't take that sitting down and announced the LaserJet IIP which is being sold for around \$1000. Talk about a

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Submissions to the newsletter should conform to the following criteria:

Column width no greater than 2 3/8". QL users should submit their articles on a microdrive cartridge or floppy disk. TS 1000 and 2068 based articles should be hard copy. All authors should consider sending their articles to the newsletter via the CATS BBS, (301) 588-0579.

Our mailing address is:

CATS
P.O. Box 467
Fairfax Station, VA 22039

NEWS, NEWS, NEWS (some old & some new)

DEEP MODEM TELLS WHAT'S GOING ON

Third Annual Picnic Held by CATS

An even dozen determined souls ventured out close behind the wake of Hurricane Hugo in order to celebrate the Third Annual CATS Family Picnic on Saturday, September 23.

What started out as a changed dramatically the picnic. A cold north—the same one Hugo's final through Greenbelt sky dark and temperature dropped than an hour, and popping up



balmy, humid day half way through front from the which affected direction—swept Park, turning the menacing. Air 20 degrees in less stiff breezes began randomly.

MANNY and IRMA traveled from Annandale, VA to the Greenbelt Park site, commented on the contrast they saw between the beginning and ending of their trip, a couple of states apart.

But the picnic went on!

MARK and SARAH FISHER brought a generous supply of SARAH's own recipe for "potatosalad through-the-garden", which the celebrants enjoyed along with their own steaks, hamburgers, and the always ubiquitous "chickendogs".

Many war stories were traded—non-computer and otherwise—with the pace accelerating markedly as the atmosphere destabilized exponentially.

WENDY LLOYD and came defend the title she She brought a

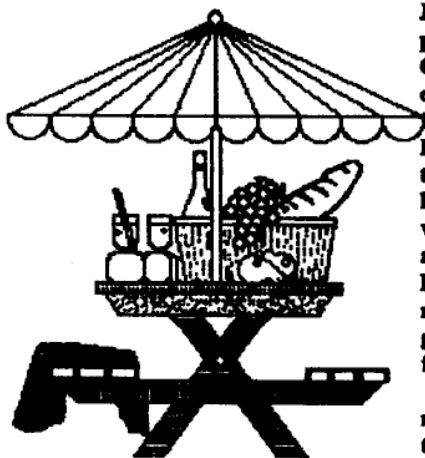
Elkridge, MD WENDY and DICKSON, TIM ACORD

abbreviated championship what else are

Our many thanks SMITH for organizing

event, and to VERNON Jr. for his dedicated help in setting things up and making the group's outing exceptionally enjoyable.

"One advantage of a smaller group", TIM ACORD said later, "was that I was able to spend some time—talking in a leisurely way—to my friends from CATS, something I never seem to be able to do the rest of the year. I had a tremendous time, and I'm already looking forward to next fall's event!"



LEWIS, daughter of JANET LEWIS, prepared to CATS badminton earned last year. friend, DONNA HARWICKER from to help her out. But her partner, HANK were defeated by and DONNA HARWICKER in an mixed doubles game, 11-8. So friends for, anyway?

membership owes to VERNON his efforts in again this special CATS

The Best of the CATS Newsletter as selected by the Editor

QL UTILITIES

by Dick Darter

```
32500 utilities
32501 REMark*****
*****
32502 DEFine PROCedure
menu_sel(menu%)
32503 REMark*****
*****
32504 LOCAL loop,key,pos
32505 OPEN#1,com:
OPEN#2,com: OPEN#3,ser
32506OPEN#4,scr_355x12a78
x206
32507 INK#0,0:
INK#1,7:INK#2,6
32508 PAPER#0,6: PAPER#1,1:
PAPER#2,2
32509
WINDOW#0,512,44,0,212:
WINDOW#1,512,212,0,0:
WINDOW #2,512,212,0,0
32510 Sweep 8: CLS: STRIP 2
32511 CSIZE 3,1: AT
0,10:PRINT "UTILITY MENU":
CSIZE 2,0
32512 FOR loop=1 TO menu%
32513 pos=loop*2: IF loop=1:
INK 7: STRIP 2
32514 AT pos,9: PRINTmenu$
(loop)
32515 END FOR loop
32516 PRINT #0,"USE UP/
DOWN OR NUMBER KEYS TO
SELECT MENU"
32517 PRINT #0," USE
ENTER KEY TO CALL
SELECTED MENU"
32518 PRINT #0," ENTER
0 TO EXIT MENU"
32519 loop=0
32520 REPEAT menu%
32521
key=CODE(INKEY$(-1))
32522 STRIP 2: INK 7: AT
pos,9: PRINT menu$(loop)
32523 IF key=48 THEN loop=0
32524 IF key=49 THEN loop=1
32525 IF key=50 THEN loop=2
32526 IF key=51 THEN loop=3
32527 IF key=52 THEN loop=4
32528 IF key=53 THEN loop=5
32529 IF key=54 THEN loop=6
32530 IF key=55 THEN loop=7
32531 IF key=216 OR key=208
THEN
```

To be concluded next month

EQUAL LOAN PAYMENTS CALCULATOR

A QL program by Dick Parker

This program is based on one written by Ward Sequin in the March '85 CATS for the 2068. It had an accuracy problem which I finally blamed on the combination of many iterations in the exponential calculation and the short word length used to store real numbers. This problem was shared in all programs for personal computers that I could check. I found that substitution of a logarithmic series both solved the accuracy problem and speeded the calculation. Increasing the length of the series increases the accuracy. I also revised the program to make annual totals available whatever the loan start month. It is now in QL basic but conversion to any other basic should not be difficult. Enjoy.

```
100 REMark *** AMORTIZATION ***
110 REMark ** EQUAL
PAYMENTS **
120 REMark * by R. W. PARKER**
125 CLS
130 PRINT "AMORTIZATION
TABLE"
140 PRINT "AMOUNT
BORROWED = ";
150 INPUT p
160 PRINT "NO. OF YEARS TO
PAY = ";
170 INPUT y
180 PRINT "STARTING AT
MONTH NO. (1 - 12) ";
190 INPUT st
200 REMark COMPUTE NO. OF
MONTHS
210 m=12*y
220 PRINT "INTEREST / YR (6
1/2% = 6.5%) = ";
230 INPUT i
240 REMark MONTHLY INTEREST
250 r=i/(100*12)
260 REMark EQUAL MONTHLY
PAYMENTS
270 REMark m1=(1+r)^m
280 le=(1-r/2+r^2/3-r^3/4+r^4/5-r^5/6
+r^6/7)*y*i/100
290 REMark e=(p*r*m1)/((1+r)^m-1)
300 m1=EXP (le)
310 e=p*r*m1/(m1-1)
320 e=f(e)
330 e=INT(e+.99)
340 REMark CALCULATE
```

```
350 ti=0: tp=0: sp=0
360 yi=0: yp=0: yt=0
370 PRINT "MONTHLY
PAYMENT = ";e
380 PRINT "#0," Hit any key to
continue"
390 z$=INKEY$ (-1)
400 CLS
410 PRINT "MO PRINCIPAL
INTEREST PRINCIPAL"
420 PRINT "NO OWED
PAYMENT PAYMENT"
430 dashes
440 FOR j=1 TO m
450 il=p*r
460 pl=e-il
470 IF j=m THEN pl=p+il
480 PRINT "st;" "f(p);"
```



```
"f(il);" "f(pl)
490 IF j=m THEN pl=p
500 REMark COMPUTING TOTALS
510 ti=ti+il
520 yi=yi+il
530 tp=tp+pl+il
540 yt=yt+pl+il
550 sp=sp+pl
560 yp=yp+pl
570 p=p-pl
580 IF st=12 THEN years
590 REMark YEAR TOTALS
600 st=st+1
610 IF st=13 THEN st=1
620 END FOR j
630 IF st<1 THEN years
640 REMark COMPUTING
SUMMARY TOTAL
650 PRINT "TOTAL INTEREST =
";f(ti)
660 PRINT "TOTAL PRINCIPAL =
";f(sp)
670 PRINT "TOTAL PAYMENTS =
";f(tp)
680 STOP
1000 REMark
1010 DEFine FuNction f(x)
1015 LOCal g
```

```
1020 g = INT (x*100+.5)/100
1025 RETurn g
1030 END DEFine f
1100 REMark
1110 DEFine PROCEDURE years
1120 PRINT "YEAR NO.
";INT((j-5)/12)+1;" TOTALS:"
1130 PRINT " TOTAL INTEREST
PRINCIPAL"
1140 PRINT " PAID PAYMENT
PAYMENT"
1150 PRINT " ";f(yt);" ";f(yi);"
";f(yp)
1160 yi=0: yp=0: yt=0
1170 wait
1180 dashes
1190 PRINT "MO BALANCE
INT. PY PRINC."
1200 dashes
1210 END DEFine years
1220 REMark
1230 DEFine PROCEDURE dashes
1240 FOR k=1 TO 37: PRINT "-";
1250 PRINT
1260 END DEFine dashes
1270 REMark
1280 DEFine PROCEDURE
wait
1290 PRINT
1300 "Hit any key to
continue"
1300 z$=INKEY$ (-1)
1310 CLS #0
1320 END DEFine wait
```



Towers of Hanoi-From Page 5

```
sk$)
194 BLOCK
#4,xshape(disks),10,xlocate(frompin)
+xoffset(disks),ylocate(-oldlevel),1
195BLOCK
#4,10,10,xposit(frompin),ylocate(oldl
evel),0
196 END DEFine graphic
```

THE HANOI TOWER

by Dick Parker

This version of the old game of moving a tower of disks from one peg to another, with one intermediate peg, has two interesting features. First, it shows the application of recursive programming which provides an elegant kernel of code for the movement of the disks. Second, it gives an example of the use of color blocks in different layers. This program is set up for the "Skip Fisher" RBG or a color composite TV.

The recursive procedure is MOVEALL which, along with the subprocedure MOVEDISK, does all the disk movement calculations. The rest of the code provides the display of the movement calculations. The heart of the display is built around a general-ization of movement between a to-pin and a from-pin via an intermediate-pin. These pins represent the three displayed pins in a cyclic fashion. This is displayed in the running of the program.

The disks are relocatable color blocks. Each disk has an index number and its color and dimensions are stored in the sequence of data statements. To move a disk, you reposition it on the top of the stack on the to-pin and blank it out on the from-pin. A small block is used to rebuild the covered part of the from-pin. It all happens so fast on the QL the eye can't see it. This program was first coded for the 2068 and you could see the blocks being built. Enjoy.

```
100 REMark TOWERS OF HANOI
GAME
101 REMark Richard W. Parker Jr.
102 REMark QL / Composite TV
103 REMark
104 initialize: display
105 PRINT #0," INPUT NO. OF
RINGS TO PLAY (1 - 7)"
106 INPUT #0, rings
107 IF rings > 7 OR rings < 1 THEN
GO TO 105
108 pin(1)=rings: count=1
109 FOR i=rings TO 1 STEP -1
110 location(1,i)=i
```

```
111 BLOCK
#4,xshape(i),10,xlocate(1)+xoffset(i),
ylocate(i),color(i)
112 END FOR i
113 PAUSE 100
114 moveall rings,1,3,2
115 STOP
116 REMark *****
117 DEFine PROCedure
movedisk(frompin,topin)
118 REMark *****
119 pin(topin)=pin(topin)+1
120 location(topin,pin(topin))=location
(frompin,pin(frompin))
121 location(frompin,pin(frompin))=0
122 graphic frompin,topin: check
topin
123 pin(frompin)=pin(frompin)-1
124 IF pin(frompin) < 0 THEN quit 1
125 PAUSE 100
126 END DEFine movedisk
127 REMark *****
128 DEFine PROCedure
moveall(height,frompin,topin,midpin)
129 REMark *****
130 IF height > 0 THEN
131 moveall
height-1,frompin,midpin,topin
132 movedisk frompin,topin
133 moveall
height-1,midpin,topin,frompin
134 END IF
135 END DEFine moveall
136 REMark *****
137 DEFine PROCedure quit (n)
138 REMark *****
139 PRINT #0," Error"!n!"in program
for
towers"!pin(1)!pin(2)!pin(3)!count
140 STOP
141 END DEFine quit
142 REMark
*****
143 DEFine PROCedure initialize
144 REMark
*****
145 DIM pin(3): DIM location(3,7):
DIM color(7): DIM
xoffset(7): DIM xshape(7): DIM
xlocate(3): DIM ylocate(7): DIM
xposit(3)
146 FOR i=1 TO 3: pin(i)=0
147 RESTORE 154
148 FOR i=1 TO 7
149 READ color(i): READ xoffset(i):
READ xshape(i): READ
ylocate(i)
150 END FOR i
```

```
151 FOR i=1 TO 3
152 READ xlocate(i): READ xposit(i)
153 END FOR i
154 DATA 2,0,95,120
155 DATA 3,5,85,110
156 DATA 4,10,75,100
157 DATA 5,15,65,90
158 DATA 6,20,55,80
159 DATA 7,25,45,70
160 DATA 10,30,35,60
161 DATA 49,91,169,211,289,331
162 END DEFine initialize
163 REMark
*****
164 DEFine PROCedure display
165 REMark
*****
166 MODE 8: OPEN #3,scr: OPEN
#4,scr: CSIZE #4,2,0
167 WINDOW #1,460,160,26,0: INK
#1,7: PAPER #1,2: CLS #1
168 WINDOW #2,460,160,26,0: INK
#2,7: PAPER #2,1: CLS #2
169 WINDOW #3,460,20,26,0: INK
#3,0: PAPER #3,2: CLS #3
170 WINDOW #4,460,140,26,20:
INK #4,7: PAPER #4,1: CLS #4
171 WINDOW #0,460,30,26,160:
INK #0,1: PAPER #0,6: CLS #0
172 AT #3,1,8: CSIZE #3,3,0: PRINT
#3,"TOWERS OF HANOI"
173 BLOCK #4,360,10,41,130,0
174 BLOCK #4,10,100,91,30,0
175 BLOCK #4,10,100,211,30,0
176 BLOCK #4,10,100,331,30,0
177 END DEFine display
178 REMark
*****
179 DEFine PROCedure check(topin)
180 REMark
*****
181 stack=pin(topin)
182 IF stack=1 THEN GO TO 185
183 IF location(topin,stack) <
location(topin,stack-1) THEN quit
184 IF pin(topin) > rings THEN quit
185 count=count + 1
186 IF count > 2^rings THEN quit
187 END DEFine check
188 REMark
*****
189 DEFine PROCedure
graphic(frompin,topin)
190 REMark
*****
191 oldlevel=pin(frompin):
newlevel=pin(topin)
192 disks=location(topin,newlevel)
193 BLOCK
#4,xshape(disks),10,xlocate(topin)+xo
ffset(disks),ylocate(newlevel),color(di
```

Continued On Page 4

Use 3 for text.

9. USR 15002

Try this to get out of an infinite input loop without crashing.

10. DIM A\$ (704)

PRINT AT 0,0; OVER 1; PAPER 1; INK 6; A\$

Allows you to change paper and ink color without clearing the screen.

11. PRINT #1; AT 0,2; "HI"

PRINT #2; AT 1,5; "BY"

PAUSE 0

Prints on lines 22 and 23.

12. LOAD "CODE

RAND USR 33792

For programs that will not load.

13. LET x=INT(x+y+.5)/10+y

Use for rounding: x=number to be rounded, y=number of decimal places.

14. 1 DEF FN r(x,y)=INT (x*10+y+.5)/10+y

2 INPUT "Enter a number ";a

3 INPUT "Round off to ? ";b

5 PRINT FN r (a,b)

Sets the defined function to the formula used for rounding off:
a=number before rounding,
b=number of decimal places desired after rounding.

15. INPUT LINE A\$

Prevents computer from placing "" on screen when waiting for input. Note: Can't use "stop" with this system, but cap-shift-6 will stop. Bug in system.

16. PRINT PEEK 23635+256 * PEEK 23636

Used to find starting address.

17. PRINT ""

Gives line feed to print statement.

18. RANDOMIZE USR 0

Used to reset computer.

19. INPUT AT 22,0; AT 10,0; "input value"; a\$

Input at any position on screen.

20. 1 FOR I=0 to 21

2 FOR X=0 to 31

3 LPRINT SCREEN\$ (I,X)

4 NEXT X

5 NEXT I

Copy screen to printer without using the copy command.

21. OPEN #2

Sends all data normally destined for the screen to the printer.

22. CLOSE #2

Cancels above command.

23. 1 LET C=2

2 FOR I=32 to 255

3 PRINT AT 0,0,""

4 PRINT AT 0,0;CHR\$ I

5 IF CODE SCREEN\$ (0,0)=0

THEN PRINT AT 4,C;

CHR4 I; LET C=C+2

6 NEXT I

Lists characters not recognized by the SCREEN\$ command.

24. CLEAR 63255

Do this first if you plan to use UDG's in a long BASIC program that will include a video mode change. A bug in the system will allow a long BASIC program to overwrite your UDG's if RAMTOP is not lowered first.

25. POKE 23750,0

If you are using cartridge S/W that can be stopped by the break key, this will allow you to enter your own basic lines into RAM. To return to the cartridge ROMware, POKE 23750,128.

26. POKE 23693,56

To give starting ink color.

27. BASIC STARTS AT 26710.

Explains itself.

28. CAPS SHIFT 3

Scroll two screens when listing.

29. POKE 26711,0

Gives line number 0. POKE 26711,1 to change line 0 to 1.

30. POKE 23659,0

To use all 24 lines (making a program unstoppable), POKE 23659, 2 resets. (Use with "inkeys" only, INPUT resets.)

31. POKE 26710,255

Used to make lines disappear (makes line NO. over 9999). POKE 26710,0 will reset.

32. INK OR PAPER 9

Gives contrasting base color.

33. 'E' MODE/CAPS SHIFT AND A COLOR 1 - 7

Gives ink color in listing.

34. "E" MODE/UNSHIFTED AND A COLOR 1 - 7

Gives paper color (go back to original color at the end of the line; if not, all the lines will be the same color).

35. 1 INPUT "COMMENT"; A\$;

CHR\$ 13; "COMMENT"; B\$

2 PRINT "COMMENT"; A\$;

CHR\$ 13; "COMMENT"; B\$

Example of double inputs.

36. 9000 for I=1 to 200

9010 BORDER 1:BORDER

2:BORDER 3:BORDER 4:BORDER

5:BORDER 6:BORDER 0:BORDER

PAUSE 1

9020 NEXT I:RETURN

Go sub9000 for a striped border.

37. POKE 23617,236

Used to get a question mark cursor displayed in input statements.

38 Print #0;"COMMENT";PAUSE 0

Use to print on line 24.

Editorial-Continued From Page 2

preemptive strike! Perhaps this will get software developers to write a driver for these machines so that the QL can use them. At the present, I know of only one program that offers a laser printer driver, Text87. Even then it is an "extra" and only for an Epson. Maybe these printers will work with the QL if they are used in the "Epson emulation" mode; however, doing so would cut any graphics resolution down from 360 X 360 dpi to 180 X 180 dpi. Can anyone out in QL Land let us know.

Byte Power

For those of you that are still using the 2068, I would like to recommend that you look into Byte Power, which

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MANDELBROT MAPS

by JOHN A. SAMPSON

TO MY KNOWLEDGE, NO ONE HAS EVER TRIED TO MAP THE PERIMETER OF THE MANDELBROT SET BEFORE. WHAT FOLLOWS IS MY SMALL ATTEMPT TO ENLARGE AND DISPLAY A TINY SECTION OF THE SET. LITTLE DID I REALISE WHEN I STARTED THIS PROJECT THAT IT WOULD TAKE OVER ONE MONTH TO COMPLETE, USE MORE THAN ONE ROLL OF 2040 PRINTER PAPER AND THAT MY TRUSTY 2068 COMPUTER WOULD BE RUNNING DAY AND NIGHT.

THE MASTER MAP (SEE FIGURES ONE AND TWO) IS MADE UP OF 18 SMALLER SUB-MAPS, WHICH ARE 2068 SCREEN DUMPS TO MY 2040 PRINTER. THESE ARE IDENTIFIED BY THE MAP NUMBER IN THE UPPER LEFT HAND CORNER OF THE SUB-MAP AND ALSO BY THE CO-ORDINATES AS LISTED IN TABLES ONE AND TWO. THESE CO-ORDINATES WERE CAREFULLY CHOSEN, BY TRIAL AND ERROR, TO GIVE A SLIGHT OVERLAP TO AID IN ALIGNMENT.

FOR THOSE OF YOU WHO WOULD LIKE TO DUPLICATE MY WORK OR PRODUCE YOUR OWN AREA MAPS, I'VE INCLUDED A LISTING OF THE BASIC PROGRAM THAT I USED, (SEE LISTING ONE). IF YOU HAVE THE TIMACHINE COMPILER, YOU CAN COMPILE THIS BASIC PROGRAM INTO MACHINE CODE AND GAIN AN APPROX. 50% INCREASE IN SPEED. IF YOU ARE FORCED TO RUN THE BASIC PROGRAM, BE PREPARED TO WAIT A LONG TIME FOR A SUB-MAP TO BE PRODUCED. THE MORE POINTS WITH-IN THE SET THAT HAVE TO BE PLOTTED MAKES BOTH THE MC AND THE BASIC PROGRAM TAKE LONGER TO PRODUCE. FOR EXAMPLE, SUB-MAP # 1 IN MC ONLY TOOK 6 HOURS-5 MINUTES TO COMPLETE. SUB-MAP #15, WHICH HAS ABOUT 50% OF IT'S POINTS INSIDE AND OUTSIDE THE SET, TOOK 19 HOURS-15 MINUTES TO COMPLETE, EVEN IN MC. IN BASIC, A SIMILAR SUB-MAP TOOK 26 HOURS-48 MINUTES.

IF YOU STILL WISH TO TRY IT OUT FOR YOURSELF, I HAVE LISTED SOME STEPS FOR YOU TO FOLLOW TO AVOID LOSING A SCREEN WHILE TRYING TO SAVE IT. IN THE BEGINNING OF THE PROJECT THIS WAS A PROBLEM AND A SOURCE OF ANNOYANCE. IF YOU HAVE ANY QUESTIONS, YOU CAN WRITE ME AT THE FOLLOWING ADDRESS. (PLEASE SEND A SELFADDRESSED AND STAMPED ENVELOPE FOR A TIMELY REPLY. GOOD LUCK AND HAVE FUN.

NOTE: YOU MAY CHANGE LINES 9991 AND 9993 TO ACCOMMODATE YOUR OWN MASS STORAGE COMMANDS, BUT BE SURE TO LOOK AT THE NOTE ON THE COMPILER INFORMATION

LISTING ONE

1 REM MandelPlot
Idea from R.K.Dewdney, Formulas
from R.A.Schrack, by Mark Fish
er1985

```
2 REM Modified for TIMACHINE
compiler by John A. Sampson of
College Point NY - June, 1989
5 REM ! OPEN #
10 DEF FN m(a,b,c)=a/b-INT (a/
b)=(a/c-INT (a/c))
15 BORDER 7: PAPER 7: INK 0: C
LS: OVER 1
20 LET s=50: LET d=0: LET e=d:
LET a=d: LET b=d: LET t=d: FOR
c=0 TO 0: NEXT c
30 INPUT "real coord. =";ac
40 INPUT "imaginary coord =";b
c
50 INPUT "side length?";side
60 LET g=side/253: LET i=256:
LET j=i/2
65 CLS: PLOT 0,0: DRAW 255,0:
DRAW 0,175: DRAW -255,0: DRAW 0
,-175
70 LET q$="": GO TO 110
75 FOR c=1 TO 100
80 LET t=e: LET e=2*d+e+b: LET
d=d+d-t+t+a: IF d+d+e+e>4 THEN
GO TO 500
90 NEXT c
100 RETURN
110 FOR y=i+INT (174/i) TO 1 ST
EP -i
115 SOUND 0,124;1,0;8,16;7,62
120 PRINT #1;AT 0,0;"p"= PLO
T "","o"= skip","v" for var
s","s"= SAVE
130 FOR x=1 TO 254 STEP i
140 IF FN m(x-1,i,j) AND FN m(y
,i,j) THEN GO TO 220
150 LET a=x+g+ac
160 LET b=bc-(175-y)*g
170 LET d=0
180 LET e=0
190 PLOT x,y
200 GO SUB 75
210 PLOT x,y
220 IF INKEY$<>" " THEN LET q$=I
NKEY$
222 IF q$="v" THEN PRINT #1;AT
0,0;"c=";c;TAB 6;"i=";i;TAB 12;"
R=";ac;TAB 21;"ITER=100","x=";x;
TAB 6;"y=";y;TAB 12;"I=";bc;TAB
21;"S=";side;"
225 SOUND 7,63-(q$="m");1,c/256
;0,c-INT (c/256)+255;13,0;12,50
230 IF q$="s" THEN STOP
240 NEXT x
250 NEXT y
260 LET j=i: LET i=i/2: IF i>=1
THEN GO TO 110
280 STOP
300 COPY
310 CLS
320 PRINT AT 0,0;" "
330 PRINT AT 0,0;" R=";ac;" I="
;bc;" S=";side;" ITER=100"
340 COPY
350 STOP
500 IF s>c THEN LET s=c
510 PLOT x,y
520 RETURN
530 REM ! CLOSE #
9991 RANDOMIZE USR 100: SAVE "ma
nd.B1"
9992 STOP
9993 INPUT a$: RANDOMIZE USR 100
: SAVE a$SCREEN$
9994 STOP
9995 INPUT a$: SAVE a$SCREEN$
9996 STOP
```


FIGURE ONE - TOP SECTION

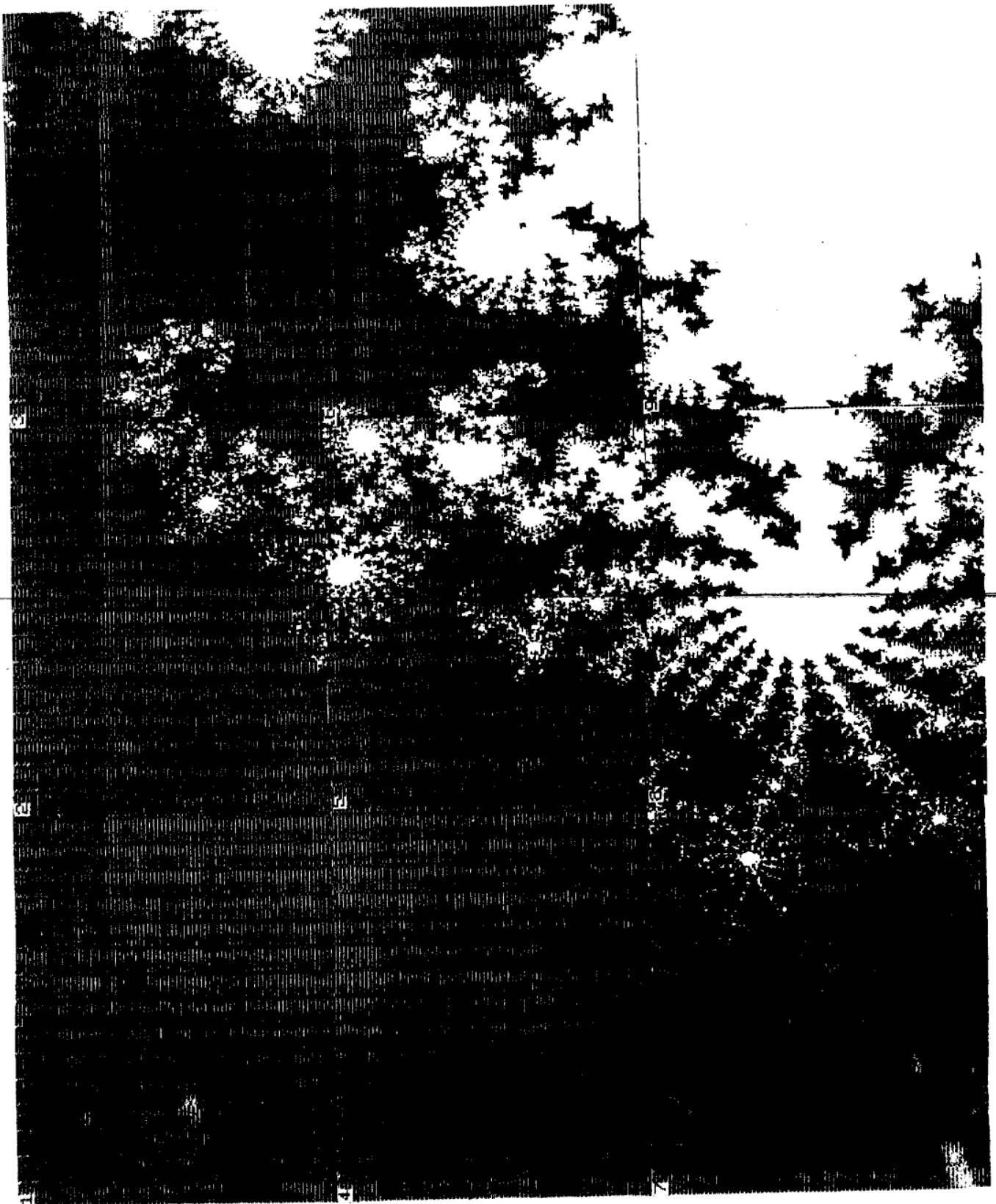
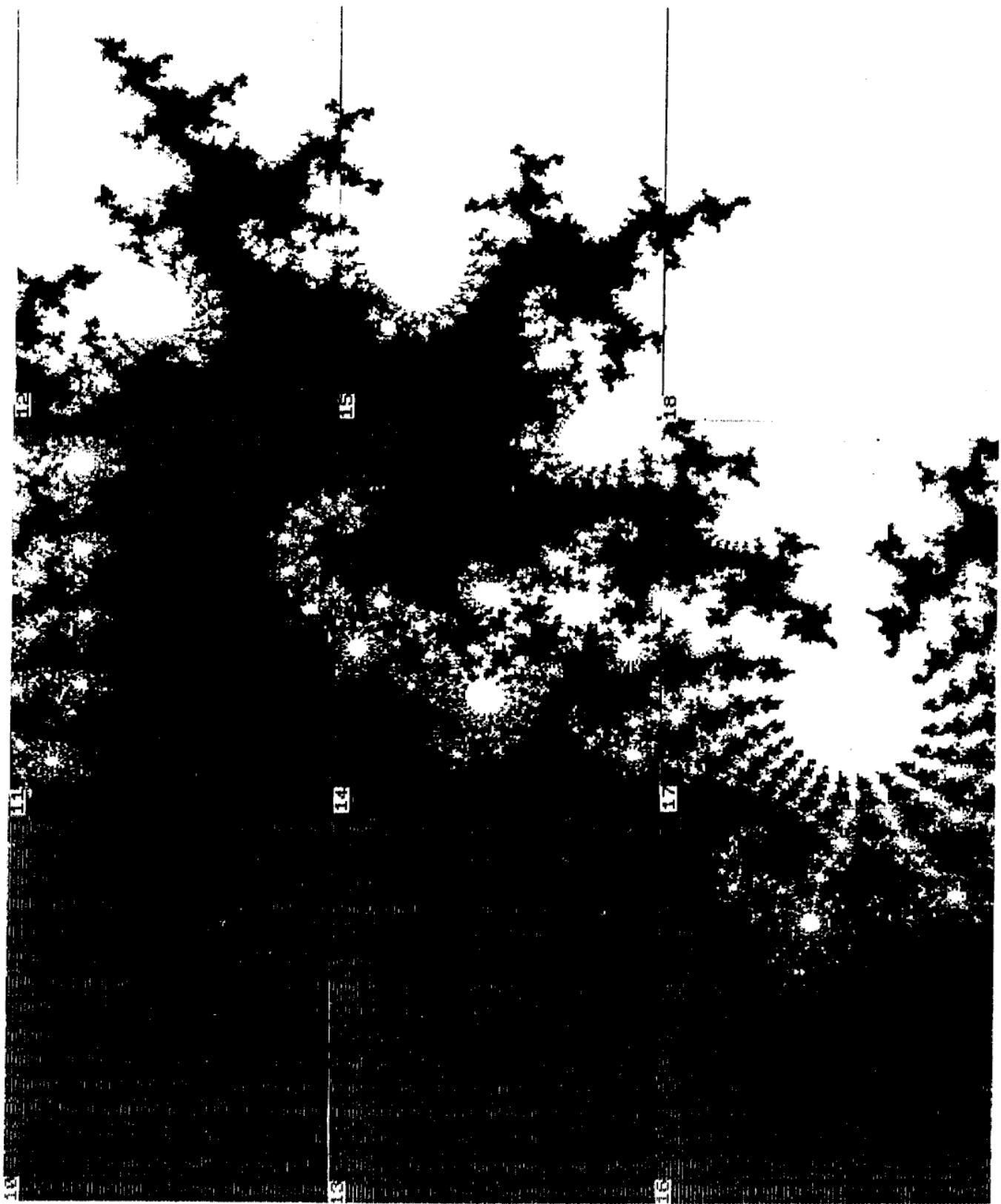


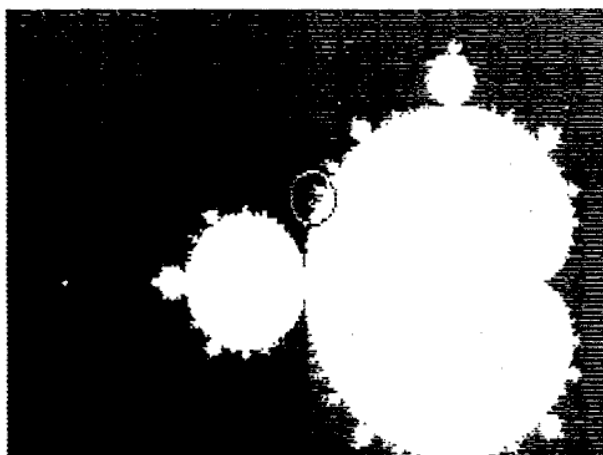
FIGURE TWO - BOTTOM SECTION



STEPS FOR USING MANDELBROT BASIC AND/OR COMPILED CODE

1. START WITH A CLEAR COMPUTER.
2. IF YOU HAVE ONE, TURN ON PRINTER
3. HAVE TAPE RECORDER CONNECTED
4. HAVE YOUR MASS STORAGE CONNECTED, IF YOU HAVE ONE
5. LOAD THE BASIC PROGRAM
6. IF YOU HAVE THE MC, LOAD IT
7. RUN THE BASIC PROGRAM
8. ENTER THE CO-ORDINATES YOU HAVE CHOSEN (R,I AND S)
9. IF YOU HAVE MC LOADED, PRESS 'S' TO STOP BASIC, AND FOLLOW STEPS 10 AND 11 OTHERWISE SKIP TO STEP 12
10. AFTER BASIC PROGRAM STOPS, ENTER RANDOMISE USA 62083
11. ENTER AGAIN THE SAME R,I,S THAT YOU ENTERED FOR THE BASIC PROGRAM. MC PROGRAM IS NOW RUNNING AFTER PICTURE IS COMPLETE PROGRAM WILL STOP. BE VERY CAREFUL TO FOLLOW THE REMAINING STEPS
12. ENTER GOTO 9995. CURSOR APPEARS. ENTER, SAVE "YOUR NAME" SCREEN# AND PRESS ENTER
13. START TAPE RECORDER AND PRESS ENTER TO SAVE SCREEN
14. REPEAT STEPS 12 AND 13 TO MAKE A SECOND COPY
15. IF YOU HAVE A MASS STORAGE DEVICE, ENTER GOTO 9993. CURSOR APPEARS. ENTER "YOUR NAME" AND PRESS ENTER
16. IF YOU HAVE NO MASS STORAGE DEVICE, ENTER GOTO 300. SCREEN WILL BE PRINTED ON 2040 PRINTER WITH A LEGEND FOR IDENTIFICATION

MANDELBROT SET



CIRCLE ABOVE IS MASTER MAP AREA

TABLE ONE

Co-ordinates for Figure One

	(R)EAL	(I)MAG	(S)IDE	ITER
1	-0.755	0.228	.01235	100
2	-0.743	0.228	.01235	100
3	-0.731	0.228	.01235	100
4	-0.755	0.220	.01235	100
5	-0.743	0.220	.01235	100
6	-0.731	0.220	.01235	100
7	-0.755	0.212	.01235	100
8	-0.743	0.212	.01235	100
9	-0.731	0.212	.01235	100

TABLE TWO

Co-ordinates for Figure Two

	(R)EAL	(I)MAG	(S)IDE	ITER
10	-0.755	0.204	.01235	100
11	-0.743	0.204	.01235	100
12	-0.731	0.204	.01235	100
13	-0.755	0.196	.01235	100
14	-0.743	0.196	.01235	100
15	-0.731	0.196	.01235	100
16	-0.755	0.188	.01235	100
17	-0.743	0.188	.01235	100
18	-0.731	0.188	.01235	100

NOTE:

AS (R)EAL CO-ORDINATE DECREASES,
IMAGE MOVES LEFT
AS (R)EAL CO-ORDINATE INCREASES,
IMAGE MOVES RIGHT
AS (I)MAG CO-ORDINATE DECREASES,
IMAGE MOVES UP
AS (I)MAG CO-ORDINATE INCREASES,
IMAGE MOVES DOWN

FOR SLIGHT OVERLAP IN SUB-MAPS
USE (R) INCREMENTS OF .012 AND
(I) INCREMENTS OF .008

WHEN BASIC PROGRAM IS COMPILED
BY TIMACHINE, YOUR SCREEN SHOULD
SHOW THE FOLLOWING:

TIME MACHINE ©1985 Cameron Hayne

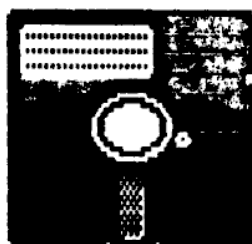
M/C: 2923 BYTES
+ 362 BYTES FOR M/C VARIABLES
(BASIC WAS 1594 BYTES)

SAVE "m/c" CODE 62083,2923
LOAD "m/c" CODE 62083

NOTE: IF YOU MAKE CHANGES TO THE
BASIC PROGRAM, THE ABOVE WILL BE
DIFFERENT. MAKE SURE YOU CHANGE
THE USA CALL IN STEP #10 TO THE
ONE YOU GET AFTER COMPILING.

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Editorial-Continued from Page 6

is a cassette based magazine. The only one. While it is sort of erratic, when it does come out it is well worth the wait. Put together by two very talented Canadians, Eric and Kristian Boisvert, it is filled with programs, utilities, and games. What also impresses me is the graphic design and font variety. The fonts are all custom ones and the whole job looks really sharp. Check it out. Byte Power, 1748 Meadowview Ave., Pickering, Ontario, CANADA L1V 3G8.

Welcome back

I'd like to welcome back the BosTUG Newsletter. This has always been a favorite of mine since it is loaded with articles which I can use in our own newsletter. After a short hiatus, they are back. Welcome back to Beter Hale and crew. While I'm at it, you might want to drop Peter a line and get on his mailing list for purchasing the next copy of his excellent program Tax-I-QL. This will give you great peace of mind when you pay your tax next year. His address is: EMsoft/Estate Management Services, P.O. Box 8763, Boston, MA 02114-0830.

In this issue

Many of our readers are fascinated by Mandelbrot sets, so the article by John Sampson, a CATS member from New York should be right up their alley. Hank Dickson has compiled some 2068 programming tips. This issue has the first installment of the Best of the CATS Newsletter. Hopefully, it will be helpful to some of our newer members. Last but not least, the other Parker, Dick, has a game and a loan payment calculator for the QL types.

CATS maintains a gratis exchange of newsletters with approximately 30 Users Groups across the U.S. and Canada. Clubs not sending a newsletter to us for six months are automatically taken off the list.

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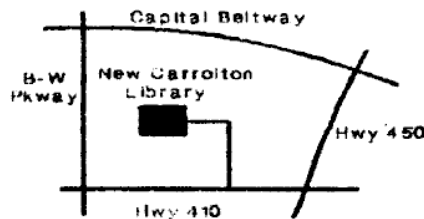
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 Timex SIG on CompuServe: Wednesday night, 10:00 PM Eastern time (GO CLUB).
 QZX BBS: (505) 522-7081 FIDO net 15, node 6, East Coast dial (703) 547-4815 FIDO net 18, node 9.

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 Memberships cost \$18 per year, are good for 12 months, and include all privileges (access to libraries, group buys, etc.). A newsletter only subscription is available for persons living outside the Washington Metro area and is \$12.00 per year.

Meetings
 Monthly meetings are held from 11:00 AM to 4:30 PM, on the second Saturday of each month, at the New Carrollton Public Library.

CATS Newsletter
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The next meeting of CATS will be held on:

Saturday, October 14, 1989 11:00 AM Pascal and Hardware Workshop
 2:00 PM General Meeting

**Please note: NOVEMBER MEETING WILL BE ON NOV. 4.
 >>FIRST<<SATURDAY IN NOVEMBER.**

At: New Carrollton Public Library
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IF YOU ARE NOT A MEMBER OF CATS, THIS IS THE ONLY ISSUE YOU WILL RECEIVE

